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HISTORY OF THE STUDY OF FUNGI AT KINGS PARK, PERTH, WESTERN AUSTRALIA

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ABSTRACT

The history of fungi knowledge at Kings Park and Botanic Garden, near central Perth in Western Australia began with the Nyoongar people who inhabited the area for many centuries prior to European settlement there in 1829. Today, the protection and understanding of bushland fungi along with the flora and fauna is an integral part of the management of Kings Park. This historical account provides a basis upon which to build an improved knowledge base about the fungi at Kings Park by outlining the records/recorders and collections/collectors of fungi (mainly macrofungi) from Kings Park to date. Major human-induced changes in the vegetation particularly since European settlement are likely to have caused changes in the fungus communities at Kings Park. The nature of these changes for fungi is not known because there have been only sporadic, uncoordinated records of fungi and their ecology at the park. The scientific study of fungi from Kings Park was instigated in the 1830's by pioneer botanical collectors who sent their specimens to mycologists overseas. Only three fungi from Kings Park were collected and lodged at the Western Australian (WA) Herbarium before the 1960's. The number of fungi lodged increased in the 1960's and 1970's, peaked in the 1980's, but tapered off again after that time. Currently,

a total of 183 collections of fungi from Kings Park made by 77 people are held at the WA Herbarium, with 140 fungi names assigned among them including 80 identified to species level. Many more fungi than those lodged at the WA Herbarium or other herbaria have been observed, recorded and possibly collected at Kings Park but were not preserved. To date a total of 285 scientific names of fungi have been recorded from Kings Park, with 122 of the names designated to species level. However, it is uncertain how many species of fungi accurately have been recorded to date at Kings Park because 145 of the 285 names are not based on specimens retained at a herbarium and therefore cannot be verified. Recently the Botanic Gardens and Parks Authority has contracted the first of intended annual surveys of fungi to develop a better assessment of fungal biodiversity at Kings Park.

INTRODUCTION

Kings Park and Botanic Garden is located only 1.5 km from the central business district of Perth, Western Australia. It includes areas of landscaped parkland, the Western Australian Botanic Garden, and a regionally significant bushland covering about 267 ha of the 400.6 ha Park. Woodlands with tall trees such as Tuart (*Eucalyptus gomphocephala*), Jarrah (*Eucalyptus marginata*), and Marri (*Corymbia calophylla*) once covered much of the bushland. However the structure and composition of Kings Park's vegetation has changed since European colonisation of the Swan River area in 1829 due to major disturbances such as logging, altered fire regimes, weed invasion, and urban encroachment (Main and Serventy 1957). Most of the large Jarrah trees in the park were removed for timber before the area was gazetted as a public park in 1872 (Bennett 1988). Tall tree woodlands have

become dominated by smaller trees and shrubs. Today the three major plant communities at Kings Park are banksia woodland, limestone heathland, and low moist areas with *Banksia ilicifolia* (Barrett and Tay 2005).

Kings Park and Botanic Garden has a rich representation of native flora, fauna and fungi. Fungi and their linkages with flora and fauna undoubtedly have central roles in maintaining the health and biodiversity of the bushland at Kings Park. Fungi are also present in the landscaped parkland and botanic garden areas of the park. As is the case in similar areas elsewhere, Kings Park has many beneficial symbiotic fungi, decomposer fungi, and some troublesome pathogenic fungi. Many hundreds of species of macrofungi (fungi with easily visible fruit bodies) may occur at Kings Park together with greater numbers of microfungi (fungi that do not produce large fruit

bodies). However little has been known about the identity or ecology of Kings Park's fungi. Major human-induced changes in the vegetation particularly since European settlement would have caused changes in the fungus communities at Kings Park. The nature of these changes for fungi is not known because there have been only sporadic, uncoordinated records of fungi and their ecology at the park.

Ongoing protection and improvement of knowledge of bushland fungi along with the flora and fauna is an integral part of the future management of Kings Park and Botanic Garden, as acknowledged in the park's management plan for 2009–2014 (Botanic Gardens and Parks Authority 2009). Recently the Botanic Gardens and Parks Authority (BGPA) took a significant step to address the poor knowledge base about Kings Park's fungi by contracting the first of annual surveys of fungi which will document the fungi of Kings Park and Botanic Garden. This historical account provides a basis upon which to build an improved knowledge base about the fungi at Kings Park by outlining the records/recorders and collections/collectors of fungi from Kings Park to date (prior to the first survey contracted by BGPA). This account primarily refers to the macrofungi, but also includes records of slime moulds and some significant pathogenic microfungi. The mainly recent scientific studies by the Botanic

Gardens and Parks Authority and their collaborators on microfungi associated with native plants such as orchids, sedges, grasses and others at Kings Park are not included.

ABORIGINAL KNOWLEDGE

Aboriginal people in many regions of Australia, including in the Perth region have local language or dialect names for many types of fungi, and traditionally they used the fungi for many purposes such as food, medicine, and cosmetics. Furthermore fungi have a deeper significance for at least some Aboriginal people, with some records indicating that fungi are involved with religious beliefs associated with the Dreamtime (Kalotas 1996). Against that background are records indicating that some Aboriginal people in the Perth region and elsewhere may have avoided or perhaps feared some fungi. For example, some Aboriginal people near Perth in the Toodyay district around 1840 were believed to be fearful of the luminescent Ghost Fungus (*Omphalotus nidiformis*), and when shown it called out "Chinga" – a local word for spirit (Kalotas 1996).

The extent of Aboriginal knowledge and use of fungi in the vicinity of Kings Park is unknown as there are no records in existence specifically for Kings Park. However the Whadjug tribe of the Nyoongar peoples, the original inhabitants (Erickson

2009) of Mooro Katta (Mount Eliza) and surrounds, are likely to have used local fungi. This is indicated by some ethnomycological records from the broader Swan River and Perth area, such as from Balbuk, the last Perth native of Woorurdup who gave the name “Yellar” for “mushroom” (Bates, undated). A more specific fungal record is “Numar”, the Nyoongar name for the edible Beefsteak Fungus (*Fistulina hepatica*) (Kalotas 1996). Other examples include a fungus recorded as the “Gnucho” of the local (Swan River) Aborigines (Hilton 1988). This fungus was collected from “on sandy soil by the Swan River” in 1841 by Ludwig Preiss and labelled as *Boletus arenarius*. Similarly, Preiss’ *Polyporus (Aps) eucalyptorum* which he found on eucalypt trunks at around the same time and place, was attributed as “the “Medop of New Holland Aborigines” (Hilton 1988). Aboriginal people used this fungus as tinder. The pioneer explorer George Grey recorded in 1841 that dried pieces of most likely “Medop” were contained in bags belonging to Aboriginal women in the south west of Australia (as cited in Kalotas 1996). “Medop” is a large bracket fungus presently referred to as White Punk (*Laetiporus portentosus*) and is often seen on large trees at Kings Park and elsewhere (Bougher 2009a).

NINETEENTH CENTURY

Fungi collected in Australia

during the nineteenth century were mainly sent to European mycologists for examination. The fungi, including those from colonial Western Australia, were not seen in fresh condition by the overseas mycologists who named and published them. The specimens often reached Europe in poorly preserved condition after many months or years, e.g. some specimens from the Swan River were described by Berkeley (1845) as “much corroded by insects”. Critical descriptive details about the fungi, their location and their habitats were often not recorded or lost. Kings Park with its prominent and central position in the Swan River Colony would have been frequented by some local pioneer observers and collectors of fungi. There were several main known resident or visiting collectors of fungi in the area during the nineteenth century.

Johann August Ludwig Preiss collected 52 fungi and lichens in WA during 1839–1841, and sent them to Elias Fries in Europe who named the fungi in J.G.C. Lehmann’s 1846 publication “*Plantae Priessianae*” (Hilton 1988). Almost all the collections of fungi from WA made by Preiss were lodged in Berlin and were destroyed during WWII. In June 1839 Preiss collected the first scientifically recorded and named collection of a fungus from Kings Park “in sandy places of the woods on Mt Eliza”. This specimen was examined and named by Fries as *Agaricus*

(*Lepiota australius* (= *Lepiota australiana* in Hilton 1982). The identity of this fungus may be *Lepiota konradii* but this remains uncertain due to conflicting descriptive features recorded by Fries (Hilton 1988). No other of Preiss' collections can be specifically attributed to Kings Park because the locations of most of his collections were not specified. However, it is probable that he collected many of his fungi from Kings Park or nearby. Many of the species he collected are now known to occur in Kings Park, e.g. his *Agaricus* (*Amanita*) *preissii* from "in shady places of the woods", and *Colus* (as "*Coleus*") *hirudinosus* from "in clearings around the small town of Perth".

James Drummond was another pioneer European collector of botanical and fungal specimens in the Perth region. He collected about 200 fungi in WA between about 1843–1846 (Hilton 1983). It is possible that at least some of Drummond's fungi collections were from Kings Park. Drummond was among the first settlers of the Swan River Colony in 1829 and he owned land under Mount Eliza for many decades from 1831 (Erickson 2009). He sometimes collected with Preiss, and not surprisingly collected some of the same species as him (Bennett 1992; May and Pascoe 1996). However, no Drummond collections from Kings Park are evident in Hilton's 1982 census of Western Australian fungi. His collections from "the Swan River" were mainly from further up-

stream and the Toodyay district, e.g. *Agaricus campestris* var. *maximus* quoted by Berkeley (1845), states that it is to be found in poor clay land in the white gum (*Eucalyptus wandoo*) forests. Drummond's specimens of fungi were sent to the British botanist William Hooker at Kew, and examined by the British mycologist Miles Berkeley who published many of them (Berkeley 1845). The Drummond collection of WA fungi is now held at Kew (see Hilton 1983).

During his visit to Western Australia in 1877, Ferdinand von Mueller encouraged local Perth ladies, particularly Lady Margaret Forrest, to collect and paint watercolours of fungi as well as wildflowers "about the neighbourhood of Swan River". These fungi and watercolours were sent to the Austrian-Hungarian mycologist Károly Kalchbrenner who published 12 of them including 5 new species (Kalchbrenner 1883). The collection location for these was not specified other than "Swan River" but it is highly probable that at least some of the collections were from Kings Park. Lady Forrest, wife of Sir John Forrest who is credited with the formal creation of the park, lived close to the park and frequently painted and rode there (Erickson 2009).

1900 – 1950

During this period, Western Australia's botanical scientific and teaching communities were

primarily influenced by the State's burgeoning agriculture and forestry industries and increasing attention to its unique and diverse native plants (Grieve 1975). Most mycological studies in this period concerned microfungi, and many fungal plant pathogens were recognized and studied (Shivas 1989). For example, a particularly troublesome stem canker disease was extensively studied as it had been devastating ornamental red-flowering gums (*Corymbia ficifolia*) at Kings Park and around Perth since at least the 1920's. The causal fungus was isolated from diseased gums by H.A.J. Pittman in 1935. Pittman's successor in 1938 as Government Plant Pathologist – W. P. Cass Smith – found that this disease spread from largely unaffected Marri (*Corymbia calophylla*) trees to planted red flowering gums (Cass Smith 1970). Red flowering gums planted in 1898 stretching along Fraser Avenue, then more planted in 1929 to commemorate the State Centenary (Bennett 1988), had to be replaced by lemon-scented gums (*Corymbia citridora*) (Main and Serventy 1957). Cultures of the fungus that Pittman had originally sent to Kew were given the name of a new species – *Sporotrichum destructor* (Cass Smith 1970). However, this name was never validly published as it lacked a Latin diagnosis. Later investigators have not been able to examine any cultures of Pittman's fungus but it is thought

that *Quambalaria coyrecup* may represent this same fungus (see Paap *et al.* 2008).

Teaching of plant pathology at the University of Western Australia was established in 1923 (Fish 1970), but mycology was not to be taught there as a discipline in its own right until at least the 1950's. In 1929 several small herbaria in Western Australia were amalgamated to form the State Herbarium (George 2009), but at that time it did not include a dedicated mycological herbarium akin to that which had been established about two decades earlier in Victoria (May and Pascoe 1996). Few macrofungi were collected and studied in Western Australia from about 1900 to 1950, and is not surprising that there are few known records of macrofungi from Kings Park during this period. The only collection from the park recorded from the period and with specimens lodged at the WA Herbarium is a *Pisolithus* sp. collected by Joseph Gentilli in November 1940.

1950'S – 1960'S

In this period many macrofungi were observed and recorded at Kings Park by some dedicated local residents and increasing numbers of students. Mycology begun to be taught for the first time at the Botany Department, University of Western Australia (UWA) under the direction of Brian Grieve within several years of his appointment as de-

partmental head in 1947 (George 2009). From the 1950's to 1987 undergraduate students studying under E.R.L. "Ruth" Johnson and then Roger N. Hilton (who started at UWA on 1st January 1965) undertook studies on fungi, often in the nearby Kings Park. The specimens were used a source for undergraduate laboratory classes at UWA. Any specimens vouchered during these studies were lodged at the UWA mycological herbarium which was founded by Mrs Johnson in 1964 (Grieve 1975). After the retirement of Roger N. Hilton at the end of 1987, the specimens were transferred to the WA Herbarium at Kensington when the UWA mycological herbarium was moved to there in February 1988.

Joseph Gentilli, a renowned long-term member of the Department of Geography at UWA, was already observing and collecting some fungi at Kings Park before 1950. This is indicated by his above-mentioned collection in 1940 of a *Pisolithus* (one year after his immigration from Italy). His pre-1950 interests in local fungi are also revealed by his article entitled "The Mushroom Season" in the *Western Mail* dated 6th May 1948 in which he made a request for the public to send him *Amanita* specimens, and by a journal article he published in 1951 about Western Australian fungi (Gentilli 1951). In that article he comments on: "two members of the most deadly group (fungi of the genus

Amanita) which are very common in King's Park". In 1953 Gentilli published a study on five species (one new) and two newly proposed forms of *Amanita* at Kings Park. (1) *A. preissii* Fr., (2) *A. preissii* forma *levis* (possibly = *A. preissii*), (3) *A. preissii* forma *ochroterrea* (current name = *A. ochroterrea*), (4) *A. conicobulbosa* Clel., (5) *Amanita loricata* sp. nov. (6) *A. umbrinella* Gilbert & Clel., (7) *A. pulchella* Cooke & Masee (current name = *A. xanthocephala*). There is no indication in Gentilli's paper as to where his specimens were lodged. However Gentilli sent many of his *Amanita* collections to Cornelius Bas in Leiden. The type specimens of *Amanita loricata* and collections of *Amanita preissii* forma *levis* (probably = *A. preissii*) cannot be found and probably do not exist (Bas 1969). Strangely, his *Pisolithus* sp. from 1940 is his only collection from Kings Park lodged at the WA Herbarium. Many of Gentilli's fungus collections are simply labeled location "not recorded" and some have the collection number designated as "Stewart". *Amanita loricata* and the other new names proposed by Gentilli (1953) – *A. preissii* forma *levis* and *A. preissii* forma *ochroterrea* – were invalidly published as he did not provide a Latin diagnosis or description for them (Bas 1969). The identity of Gentilli's *Amanita conicobulbosa* is also doubtful because Bas determined that his specimen belongs to another species (Bas 1969).

In 1957 an appraisal of the natural history of Kings Park was published by the Western Australian Naturalists' Club (Main and Serventy 1957). One microfungus – *Sporotrichum destructor* (current name may be *Quambalaria coyrecup*, see above), and six species of macrofungi are mentioned: *Amanita preissii*, *Amanita loricata*, *Schizophyllum commune*, *Psalliota campestris* (current name = *Agaricus campestris*), *Trametes cinnabarina* (= *Pycnoporus coccineus*), *Polyporus eucalyptorum* (= *Laetiporus portentosus*). Mention is also made by Main and Serventy (1957) of the five species of *Amanita* described by Gentilli (1953). Finally they also provide a comment that “on wattles particularly where the wood is damp are several species of *Mycena*” at Kings Park.

During the period 1964 to June 1965, Peter H. Ross recorded 116 species in Kings Park according to a letter he sent in 1965 to John S. Beard (see more details below). He recorded at least a further 16 at the park after that time. Mr Ross gained permission to collect fungi at Kings Park in July 1963 from Beard, who was the Director Kings Park at the time. In order to pinpoint locations of fungi, Ross, who was a qualified surveyor, laid down a grid of lines across a 200 feet to the inch map of Kings Park to establish grids of 200 feet east to west and 100 feet north to south. Two years later he sent a typed letter dated 28 June 1965 to J.S. Beard in which he pointed out

the diversity and significance of fungi at Kings Park and made a request for some assistance in order to further his work. The studies on fungi by Ross took the form of a loose compilation, punched holed and strung together into an unpublished volume entitled *Mycology Notes 1966 – 1970 – 1973* (Ross undated). This volume contains brief and hand written notes of inconsistent detail about each of the included 180 records. Spore prints, and a few photographs accompany some of the notes. 61 records included in the volume are from Kings Park, representing an estimated maximum of 44 species of fungi (note discrepancy in number to above). The remainder of the records are from various other locations in Western Australia such as Nedlands, Churchmans Brook, Kelmscott in the Perth region, and Albany on the south coast. The Kings Park records are annotated with a grid map reference relating the above mentioned grid. Strangely the dates indicated on records in this volume are broader than the volume's title suggests. The first entry (no. 01) is labeled “found during June–August 1963. This entry consists of an unidentified brown spore print from “Kings Park southside”. The last entry in the Ross volume (no. 180) is dated 4 September 1973, and consists of a black spore print and a colour photograph annotated “at Mitchells property 5 miles north of Albany, *Panaeolus* or *Coprinus*” (it appears to be a *Panaeolus*). Many

of the fungi recorded by Peter Ross were not identified or verified, although some tentative identifications were provided by Roger N. Hilton then a lecturer at the Botany Department UWA, and Kevn Griffiths then a school teacher living at Parkerville. A batch of the Ross slides ranging in date from 6 August 1963 (corresponds with collection no. 01 in his compiled volume) to 24 June 1970 (corresponds with record no. 175 in the volume) were viewed by R. N. Hilton who produced an undated, hand written 3 page listing of Ross' notes and tentative names of the fungi. It appears that no voucher specimens were retained by Peter Ross. There is only one indirect record in the databases at the WA Herbarium pointing to him as a collector of fungi. It is among the notes accompanying a voucher collection (PERTH 755613) labeled *Clitocybe* sp., dated July 1970. The notes read that it was collected from under *Casuarina* by "Peron Ross, son of Mr. P.H. Ross who had specialized on fungi in Kings Park".

Evidently the compiled volume entitled *Mycology Notes 1966–1970–1973* did not include all of Peter Ross' records and collections. For example, although Ross himself stated to J.S. Beard that he had recorded 116 species in Kings Park during the period 1964 to June 1965, the volume includes only 48 records up to June 1965 representing about 35 species. Kevn Griffiths (personal communication, 2009) believes that a

second volume by Peter Ross may have existed, but such a volume has not been located. The Ross volume (Ross undated) is currently held at the WA Herbarium, together with two Kodak boxes of colour slide images of fruit bodies.

1970'S – 1980'S

During this period, fungi attracted the attention of the managers of Kings Park due to devastating outbreaks of a root rot disease. Also a number of mycological experts and enthusiasts from overseas collected larger fungi at Kings Park, and at the close of this period an exhibition of fungi was held at Kings Park to encourage community attention to fungi.

In the 1970's an attractive golden-coloured root rot fungus gained attention as it was destroying tuart (*Eucalyptus gomphocephala*) trees and other woody plants near the pioneer women's memorial fountain. An article in *The West Australian* dated 5th August 1974 claimed that this fungus had killed nearly 2000 trees and shrubs at Kings Park since 1968. By about 1970, this fungus had also already begun to spread in developing western suburbs of Perth such as City Beach and Wembley Downs. An article in *The West Australian* dated 1st September 1971 shows workmen digging a 4 feet deep ditch in Kings Park before laying plastic sheeting to prevent the spread of honey fungus in cultivated

garden areas from several areas in the park. Many specimens of the fungus were collected from Kings Park in 1974 including by UWA mycologist Roger N. Hilton (14 June 1974) and the then Director of Kings Park Paul R. Wycherley (19 June 1974). At the time this fungus was thought to be *Armillaria mellea*, but collections of it from Kings Park and elsewhere in Western Australia were later confirmed as *Armillaria luteobubalina* Watling & Kile (Kile *et al.* 1983).

Just prior to one of the major outbreaks of *Armillaria* at Kings Park in 1974, Roy Watling from the Royal Botanic Garden, Edinburgh had visited Western Australia. He recorded some collections of fungi from Kings Park during that visit (Watling 1976), but he collected no fungi from there during his second visit to WA in April 1982 (Watling 1982). In 1974 he stayed in Western Australia May 11th to 24th after a tour throughout eastern Australia. He took back to Edinburgh from Australia over 800 specimens, reduced by an unrecorded amount due to an unspecified accident in Canberra (Watling 1976). His itinerary indicates that he collected in Kings Park on May 23 in 1974. Eleven collections from Kings Park were vouchered and taken back to Edinburgh. Some were included in later taxonomic publications. For example, a giant-sized *Phylloporus* collected at Kings Park on 22nd May 1974 by T. Barley was shown to Roy Watling

by R.N. Hilton who at the time considered it to be *Phylloporus hyperion* (Hilton personal communication, 2010). This collection was later designated as holotype of the new species *Phylloporus clelandii* in a journal paper by Watling and Gregory (1991). In this case, only part of the collection was lodged in Edinburgh (Wat. 10257), and another part has been retained at the WA Herbarium (PERTH 770973, formerly UWA 1930). The location and habitat of this collection within Kings Park is unclear because the notes with the original voucher specimens do not concur with the published details. The original notes hand-written by R. N. Hilton on the herbarium packet label are: "Loc. Kings Park near Main Car Park, Perth, WA; Hab. Amongst exotic species of plant", whereas Watling and Gregory (1991) state it as from "under *Eucalyptus camaldudensis* (should read *camaldulensis*) Dehnh., in avenue".

In 1975, some students from Western Australia's new Murdoch University in its inaugural year came across the giant-sized *Phylloporus* in Kings Park. They had noted that this fungus showed some bluing reaction when bruised, and ate some of the supposed "Blue Meanies". However the students reported that they did not experience a "hallucinogenic trip", and fortunately they did not suffer any poisoning (R. N. Hilton, personal communication 2010).

In 1981 Orson K. Miller Jr. from the Virginia Polytechnic and State University in the USA visited Western Australia. However, he only vouchered one fungus at the WA Herbarium from Kings Park that year: *Lepista sordida*, collected from beside the DNA tower.

The Austrian-Swiss mycologist Egon Horak visited Western Australia in May 1985 and he collected many fungi in the Perth region and the south-west. He took his collections back to his herbarium in Zürich, Switzerland for study. Representative portions of some of them were retained in Western Australia. Only one of his collections from Kings Park, was retained in the WA Herbarium – a collection of the Ghost Fungus labeled by Horak as *Pleurotus nidiformis* (UWA 3347, PERTH 919896, ZT 2662). Horak noted that these specimens had broad ovoid spores, luminescence, and toxicity to humans – all characters more typical of the genus *Omphalotus* than of *Pleurotus*. No doubt he considered his fungus to represent *Omphalotus*. However the formal change of name for the Ghost Fungus from *Pleurotus* to *Omphalotus* was published later by Orson K. Miller Jr. based on observations and collections he made during his second visit to Western Australia in May to June 1989. During this visit he and his wife Hope Miller lodged 25 collections at the WA Herbarium from Kings Park. Mostly they were collected on the 19th and 21st

of May 1989, including about 5 collections of the Ghost Fungus. Orson Miller undertook mating compatibility tests using single spore isolates including those from his Kings Park collections and some others from Western Australia. He proposed the new name *Omphalotus nidiformis*, and concluded that this species has a wide range of colour forms and variable levels of luminescence (Miller 1994).

Collections of fungi from Kings Park made by the Miller's in 1989 also include specimens which were subsequently cited by Miller (1991) as representing two new species from Western Australia – *Amanita brunneiphylla* (PERTH 7587562, OKM 23660) and *A. griseibrunnea* (PERTH 7587589, OKM 23663).

In October 1989, an exhibit “Fungi of Kings Park” by the UWA Botany Department in conjunction with Kings Park staff was held in one of the tents at the annual Kings Park Wildflower Festival. The display featured a large sign proclaiming “Some 200 species of larger fungi have been recorded for the park and many more await discovery”.

1990'S – PRESENT

This period has seen a significant increase in scientific and public community awareness and interest in the biodiversity and roles of fungi in bushland ecosystems of the Perth region and elsewhere in Western Australia. Numerous public fungi

forays were held in Perth bushlands, including some at Kings Park. During this period, fungi were included in management plans developed for Bold Park and Kings Park by the Botanic Gardens and Park Authority (Botanic Gardens and Parks Authority 2006, 2009). In 2009, the Botanic Gardens and Parks Authority drew up a contract to begin the first of annual surveys of fungi of Kings Park and Botanic Garden.

Interest in the role of fungi in bushland management at Kings Park had been building for some time leading up to the early 1990's. For example, in correspondence dated 4 December 1991, Bob Dixon (then according to this correspondence Team Coordinator of the Bushland Management Team) thanked Roger Hilton for agreeing to write up a fungi list for Kings Park Bushland and requested that he also address a number of ecological and management issues, e.g. effects of regular fires, and effects of removal of dead wood. In his returning correspondence dated 6th March 1992 Hilton provided brief discussions on most of Dixon's questions, but indicated that he was awaiting the impending development of a database at the WA Herbarium before providing him with a comprehensive list of fungi recorded at Kings Park. Mr Hilton also prescribed as "Priority 1" the need to "conduct a complete fungal survey, mapping locations of species and extent".

In May 1991 Orson K. Miller Jr. visited Western Australia for a third and final time. During this visit he vouchered at least three collections of fungi from Kings Park. Miller (1994) quotes two collections of *Omphalotus nidiformis* from Kings Park in 1991 but only one of them is lodged at the WA Herbarium (PERTH 4198573, coll. 31 May 1991). Miller's only other collection from Kings Park in 1991 was of *Amanita basiorubra* (OKM 24890, from May Drive, 19 June 1991). The collection was cited by Miller (1992) in his publication of *A. basiorubra* as a new species. A portion of this collection was originally retained at the CSIRO mycology herbarium, Floreat Park (as E809) but appears to have been lost during the transfer of that herbarium to the WA Herbarium in 2004.

During the 1990's four public forays were held at Kings Park for community groups. The first one was held for the Guides and Friends of Kings Park on June 6th 1997 and was led by Neale Bougher (Mycologist, CSIRO Forestry) and Ray Wills (Ecologist, Kings Park). This foray recorded about 50 species at four sites. Similar community fungi forays were led by these scientists on 14 June 1998 (unknown number of species recorded, 2 collections lodged at the WA Herbarium), 13 June 1999 (22 species recorded), and by Bougher with the Friends of Kings Park on 11 July 1999 (about 25 species recorded).

In 1998 a brief (single season)

study on the interaction of fire and the occurrence of macrofungi in Kings Park was undertaken at two burnt sites by Jeffrey Hallberg, under supervision by Ray Wills (BGPA), Neale Bougher (CSIRO), and Jacob John (Curtin University). 31 fungi were recorded (Hallberg 1998). The main findings were that fire has a large impact on the occurrence of fungi at Kings Park, and that fungi diversity at the park increases with time since a fire. Also in 1998, a short, illustrated article entitled "Fungi of Kings Park and Botanic Garden" was published highlighting the "largely unseen, but crucial, ecological roles that these fungi have in Kings Park which contribute to the continued health of the Park bushland" (Bougher and Wills 1998).

Another public fungi foray at Kings Park was lead by Neale Bougher on July 2nd 2000. 35 species were recorded. Yet another foray was lead by the newly-formed Perth Urban Bushland Fungi project (PUBF) on June 9th 2004 with Kings Park Guides. This foray ran for several hours but the group ventured barely 50 metres distance from its starting point at Hale Oval due to the intense level of discussion among the foray group about each of the 10 fungi recorded that day (Bougher *et al.* 2005). Of particular cause for excitement was the first recorded collection in Western Australia of the Spotted Pixie Cap (*Mycena nargan*). Also there were various opinions

voiced about referring to the earthball *Pisolithus* as "the Dog Poo Fungus". In response to requests from participants of this foray, a list of 100 fungi names recorded from Kings Park was posted on the PUBF web site in 2005.

In 2006 a study of myxomycetes (true slime moulds) was undertaken by Curtin University of Technology PhD student Cecilia Jordan at one site in Kings Park and two sites in other urban bushlands in Perth. Samples of bark obtained 4th May 2004, were incubated in moist chambers. Vouchered specimens representing 10 species from the study site at Kings Park are lodged at the WA Herbarium (Jordan *et al.* 2006).

In 2009, fungi were featured in a splendid new book about Kings Park and Botanic Garden by Dorothy Erickson entitled "A Joy Forever" (Erickson 2009). A few clarifications about the fungi section in that book are warranted. (a) There was no Naturalists Club fungi survey in 1957. (b) The current names for species mentioned in the text are: *Psalliota campestris* = *Agaricus campestris*, *Trametes cinnabarina* = *Pycnoporus coccineus*, *Polyporus eucalyptorum* = *Laetiporus portentosus*, *Schizophyllum commune* is the current name, *Sporotrichum destructor* = probably *Quambalaria coyrecup* (as hypothesized by Paap *et al.*, 2008), and *Amanita pulchella* = *Amanita xanthocephala*. (c) The type specimens mentioned of *Amanita loricata* cannot be found and probably do not exist (Bas 1969).

(d) The words about the Perth Urban Bushland Fungi Project should more accurately read: *The Perth Urban Bushland Fungi Project – a collaborative project between the Western Australian Naturalists' Club (Inc.) and the Urban Bushland Council in conjunction with the Department of Environment and Conservation lead by Dr Neale Bougher (Research Scientist at the Western Australian Herbarium) has provided a list of about one hundred species in the park ...* (e) The unacknowledged photo on page 305 was taken by Neale Bougher. This image was evidently copied into the Erickson (2009) book directly from an article in the newsletter of the Friends of Kings Park written by Neale Bougher and Ray Wills (Bougher and Wills 1998). The fungus in the photo is more likely to be a species of *Psathyrella* than *Panaeolus* and was growing near Ludlow, not in Kings Park. Its inclusion in the 1998 article as a fungus purportedly from Kings Park was an error regrettably perpetuated in "A Joy Forever".

VOUCHERED COLLECTIONS OF FUNGI FROM KINGS PARK

Records of fungi based on specimens permanently vouchered at a herbarium are of high value because they can be verified at any time by examination of the specimens. Unfortunately the majority of records from Kings Park cannot be verified as they are not vouchered (see below). The Western Australian (WA) Herbarium at Kensington,

Perth is the main repository of fungi specimens from Kings Park. Exceptions of specimens that are or were lodged elsewhere include: (a) collections from the nineteenth century sent to overseas mycologists who lodged them in European herbaria; (b) some of the collections of *Amanita* by J. Gentilli in the 1950's which are held at Leiden (Bas 1969); (c) some of the collections in the twentieth century made by visitors from overseas who did not retain representative portions of all of their collections from Kings Park at the WA Herbarium, such as a collection of *Omphalotus nidiformis* cited by Miller (1994).

A total of 183 collections from Kings Park are held as permanent vouchers at the WA Herbarium (Table 1). The vouchered fungi have been collected by 77 different people, mostly only one collection by each person. The individual collectors with the most vouchered collections from Kings Park are: Cecilia Jordan (17 in 2004), Orson K. Miller Jr. (24 mainly in 1989, also 1981, 1991), and Neale L. Bougher (35 mainly 1997–1999, also 1985, 1986, 1989, 2004). No collections are held at the WA Herbarium from the nineteenth century. After that century the number of collections vouchered has increased, but not uniformly so over the decades (Table 1). Very few fungi (only 3) were vouchered at the WA Herbarium from Kings Park before the 1960's, including none in the 1900's, 1930's, and 1950's. The number of vouchers, indi-

vidual fungi identities represented by vouchers, and collectors increased in the 1960's and 1970's, peaked in the 1980's, but tapered off again after that time (Table 1).

There are 140 different names among the 183 vouchered collections of fungi from Kings Park. Most of the fungi collected and vouchered from Kings Park have been vouchered only once, e.g. 71% (57) of the 80 vouchered fungi identified to species level have only one vouchered collection at the WA Herbarium.

The Ghost Fungus (*Omphalotus nidiformis*) with 8 vouchered collections, and the Golden Wood Fungus (*Gymnopilus allantopus*) with 6 collections have been collected and vouchered more times than any of the other fungi from Kings Park. This is not surprising as those species are among the most conspicuous and abundant fungi in the area. They were among the first fungi collected and vouchered from the new Swan River Colony by James Drummond and they were re-

Table 1. Vouchers held at the Western Australian Herbarium of fungi collected from Kings Park and Botanic Garden.

Notes:

- (1) For the purposes of this table, names not identified to species level, i.e. designated as sp. in the WA Herbarium database are all considered as different taxa. Further studies may prove some to be the same species as each other.
- (2) Anonymous collectors are considered to be different individuals for collections made on different dates.
- (3) Totals for No. fungi names and No. collectors in this table are not equivalent to the sum of the numbers above because some of the names and collectors were registered in more than one of the decades.

Decade	No. vouchers	No. fungi names	No. collectors	Main collector (No. collections)
1900's	0	0	0	–
1910's	1	1	1	A. Cayzer (1)
1920's	1	1	1	W.M. Carne (1)
1930's	0	0	0	–
1940's	1	1	1	J. Gentilli (1)
1950's	0	0	0	–
1960's	21	19	12	H.C. Broughton (6)
1970's	28	23	16	A.M. Young (6)
1980's	63	53	27	O.K. Miller Jr. (24)
1990's	36	31	11	N.L. Bougher (29)
2000's	26	23	6	C. Jordan (17)
undated	6	6	6	–
TOTAL	183	140	77	–

spectively named by Miles Berkeley as *Agaricus (Pleurotus) nidiformis* (and as *lampas*) and *Agaricus (Pholiota) allantopus* (Berkeley 1845; Hilton 1983).

NAMES OF FUNGI RECORDED FROM KINGS PARK

Many more fungi than those lodged at the WA Herbarium or other herbaria have been observed, recorded and possibly collected at Kings Park but were not preserved. To date, a total of 285 unique scientific names of fungi have been recorded from Kings Park (Table 2). However this includes only 122 names identified to species level, with the remainder of the names (163) only designated to genus level and labelled as "sp.". It should be noted that these totals include treating each of the 163 names designated as "sp." as separate species. The identities of some of the "sp" names listed under the same genus are likely match the same species as each other. Some of the "sp." names are also likely to match the identity of some of the other names that have been identified to species level, regardless of genus. No attempt has been made by the current author to determine if any of these possibilities are true in any particular case.

Approximately half (145) of the names recorded from Kings Park are not based on specimens vouchered at the Western Australian Herbarium (Table 2). The identity of most of the un-

vouchered names cannot be verified at any level because they lack accompanying descriptive notes. It is likely that at least some of the 145 un-vouchered names match the same species identity as some of the 140 names assigned to vouchered collections.

CONCLUSIONS

Efforts to document the fungi at Kings Park since European settlement in the area have resulted in the accumulation of numerous records and collections, indicating that many hundreds of species of fungi are likely to occur in the park. However, the efforts have been mostly sporadic and uncoordinated and have not yielded an accurate measure of the total number of fungi species recorded to date at Kings Park. The measure is not accurate because 145 of the 285 scientific names recorded cannot be verified as they are not based on vouchered specimens held at a herbarium. It is not possible to determine how many of the un-vouchered records accurately represent species that are different to or the same as vouchered records so far from Kings Park. If all un-vouchered records are dismissed and vouchered records are considered alone, the total number of fungi species recorded to date at Kings Park may be estimated as between 80 (the number of names based on vouchered specimens identified to species level) and 140 (all vouchered names

Table 2. Scientific names of fungi collected or recorded at Kings Park and Botanic Garden.

Codes:

A and B: Names based on Kings Park specimens vouchered at the Western Australian Herbarium –

A. Names identified to species level.

B. Names identified only to genus level.

C and D: Names based on Kings Park records without vouchers retained in the Western Australian Herbarium –

C. Names identified to species level.

D. Names identified only to genus level.

PERTH No.: Accession number of vouchers (from Kings Park) held at the WA Herbarium.

Fungus Name	Code	Date first collected or recorded	Collector/Recorder (Reference for non-vouchered records)	PERTH No.
<i>Agaricus (as Psalliota) campestris</i>	A	1957	Not stated (Main & Serventy 1957)	7597428 (Coll. in 1997)
<i>Agaricus</i> sp.	D	31/07/1963	P.H. Ross (Ross unpubl. notes)	
<i>Agaricus</i> sp.	D	23/05/1974	R. Watling (Watling 1976)	
<i>Agaricus</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Agaricus</i> sp. non-yellowing	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Agrocybe arenicola</i>	A	?	Anonymous	759317
<i>Aleurina asperulus</i>	A	19/07/1984	D. Waldie	1126350
<i>Amanita basiorubra</i>	A	19/06/1991	O.K. Miller Jr. (Miller 1992)	7597371 (Coll. In 1997)
<i>Amanita brunneiphyllo</i>	A	21/05/1989	O.K. Miller Jr. & H. Miller	7587562
<i>Amanita conicobulbosa</i>	C	June/July 1950?	J. Gentilli (Gentilli 1953)	
<i>Amanita griseibrunnea</i>	A	21/05/1989	O.K. Miller Jr. & H. Miller	7587589
<i>Amanita loricata</i>	C	June/July 1950?	J. Gentilli (Gentilli 1953)	
<i>Amanita ochroterrea</i> (Gentilli's A. preissii f. ochroterrea)	A	June/July 1950?	J. Gentilli (Gentilli 1953)	7607512 (Coll. in 1982)
<i>Amanita preissii</i>	A	June/July 1950?	J. Gentilli (Gentilli 1953)	7547722, 7547714 (Colls. in 1989)

Table 2 (cont.)

Fungi Name	Code	Date first collected or recorded	Collector/Recorder (Reference for non-vouchered records)	PERTH No.
<i>Amanita preissii forma levis</i>	C	June/July 1950?	J. Gentilli (Gentilli 1953)	
<i>Amanita princeps</i>	C	23/05/1974	R. Watling (Watling 1976)	
<i>Amanita</i> sp.	B	1/06/1974	Anonymous	7575254
<i>Amanita</i> sp.	B	28/05/1980	J. Viska	904651
<i>Amanita</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587317
<i>Amanita</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587325
<i>Amanita</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587333
<i>Amanita</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587546
<i>Amanita</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587554
<i>Amanita</i> sp.	B	21/05/1989	O.K. Miller Jr. & H. Miller	7587570
<i>Amanita</i> sp.	B	21/05/1989	O.K. Miller Jr. & H. Miller	7587597
<i>Amanita</i> sp.	B	21/05/1989	O.K. Miller Jr. & H. Miller	7662300
<i>Amanita</i> sp.	B	8/06/1989	H. Miller	7564597
<i>Amanita</i> sp.	D	?	P.H. Ross (Ross unpubl. notes)	
<i>Amanita</i> sp.	D	23/04/1964	P.H. Ross (Ross unpubl. notes)	
<i>Amanita</i> sp.	D	13/05/1965	P.H. Ross (Ross unpubl. notes)	
<i>Amanita</i> sp.	D	22/05/1965	P.H. Ross (Ross unpubl. notes)	
<i>Amanita</i> sp. (<i>conicobulbosa?</i>)	D	6/10/1965	P.H. Ross (Ross unpubl. notes)	
<i>Amanita</i> sp. rooting	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Amanita</i> sp. small white, marginate bulb, ring present	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Amanita</i> sp. <i>vaginatae</i> group	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Amanita</i> sp. very strong smell	D	23/05/1974	R. Watling (Watling 1976)	
<i>Amanita</i> sp. white marginate bulb, white scales, white pendulous ring	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Amanita</i> sp. species A	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Amanita</i> sp. species B	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	

<i>Amanita</i> sp. <i>species</i> C	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	7607466
<i>Amanita</i> sp..	D	1998	J. Hallberg (Hallberg 1998)	(Coll. in 1982), 920517
<i>Amanita umbrinella</i>	C	June/July 1950?	J. Gentilli (Gentilli 1953)	(Coll. in 1985)
<i>Amanita xanthocephala</i> (Gentilli's <i>A. pulchella</i>)	A	June/July 1950?	J. Gentilli (Gentilli 1953)	1125753 7097549 768251 767778 776211 7597304 774650 7597290 (Coll. in 1997)
<i>Anthracobia muelleri</i>	A	5/06/1970	D. Waldie	
<i>Arcyria incarnata</i>	A	30/06/2005	P. Gurry	
<i>Armillaria luteobubalina</i>	A	19/07/1974	P.R. Wycherley	
<i>Armillaria</i> sp.	B	14/06/1974	R.N.H.	
<i>Austropaxillus</i> (as <i>Paxillus</i>) <i>muelleri</i>	A	?/07/1977	H. Soord	
<i>Bolbitis vitellinus</i>	A	30/05/1997	M.E. & N.L. Bougher	
<i>Boletus nigerrimus</i>	A	?	J. Turner	
<i>Boletus pallidus</i>	A	22/05/1974	K. Elson	
<i>Boletus regius</i>	C	4/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Boletus</i> sp.	B	13/06/1981	Anonymous	7589921
<i>Boletus</i> sp.	B	13/06/1981	N. Malajczuk	7609159
<i>Boletus</i> sp.	B	24/06/1981	Anonymous	7590083
<i>Boletus</i> sp.	B	4/05/1982	N. Malajczuk	7607377
<i>Boletus</i> sp.	B	14/05/1986	N.L. Bougher	7712995
<i>Boletus</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587341
<i>Boletus</i> sp.	B	19/05/1989	O.K. Miller Jr. & H. Miller	7587368
<i>Boletus</i> sp.	B	21/05/1989	O.K. Miller Jr. & H. Miller	7587430
<i>Boletus</i> sp.	B	21/05/1989	O.K. Miller Jr. & H. Miller	7587511
<i>Boletus</i> sp.	B	15/06/1989	N.L. Bougher	7548362
<i>Boletus</i> sp.	B	16/06/1989	O.K. Miller Jr & H. Miller	7548354
<i>Boletus</i> sp.	D	?	P.H. Ross (Ross unpubl. notes)	
<i>Boletus</i> sp.	D	31/07/1963	P.H. Ross (Ross unpubl. notes)	
<i>Boletus</i> sp.	D	20/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Boletus</i> sp.	D	11/05/1965	P.H. Ross (Ross unpubl. notes)	
<i>Boletus</i> sp.	D	24/05/1965	P.H. Ross (Ross unpubl. notes)	

Table 2 (cont.)

Fungi Name	Code	Date first collected or recorded	Collector/Recorder (Reference for non-vouchered records)	PERTH No.
<i>Boletus</i> sp.	D	2/06/1965	P.H. Ross (Ross unpubl. notes)	
<i>Boletus</i> sp.	D	12/05/1974	R. Watling (Watling 1976)	
<i>Boletus</i> sp.	D	23/05/1974	R. Watling (Watling 1976)	
<i>Boletus</i> spp.	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Calocera guepinioides</i>	A	14/06/1998	N.L. Bougher	7608187
<i>Calocera</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Calocera</i> sp.	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Calocera</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Calvatia candida</i>	A	?/05/1962	B. Phillips	953539
<i>Calvatia</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Campanella gregaria</i>	A	9/07/2004	N.L. Bougher <i>et al.</i> (Bougher <i>et al.</i> 2005)	7678924
<i>Ceratiomyxa fruticulosa</i>	C	1998	J. Hallberg (Hallberg 1998)	
<i>Clitocybe dealbata</i>	C	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Clitocybe semiocculata</i>	A	14/07/1966	H.C. Broughton	755117
<i>Clitocybe</i> sp.	B	14/07/1966	H.C. Broughton	735523
<i>Clitocybe</i> sp.	B	?/07/1970	P. Ross	755613
<i>Clitocybe</i> sp.	D	?	Anonymous	
<i>Collaria arcyriionema</i>	A	16/07/2004	C. Jordan	6873006
<i>Collaria elegans</i>	A	19/07/2004	C. Jordan	6873065
<i>Collybia</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Collybia</i> sp.	D	5/05/1965	P.H. Ross (Ross unpubl. notes)	
<i>Coltricia cinnamomea</i>	C	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Coltriciella dependens</i>	A	?	R.N. Hilton	939447
<i>Colus pusillus</i>	C	5/07/1965	P.H. Ross (Ross unpubl. notes)	
<i>Comatricha ellae</i>	A	21/07/2004	C. Jordan	6872883
<i>Comatricha nigra</i>	A	9/07/2004	C. Jordan	6872948
<i>Comatricha rigidireta</i>	A	14/07/2004	C. Jordan	6873057

<i>Comatricha</i> sp.	B	21/07/2004	C. Jordan	6872999
<i>Coprinopsis stangliana</i>	A	2/06/1997	N.L. & M.E. Bougher	7240562, 7340570 (Coll. in 1999)
<i>Coprinus atramentarius</i>	C	22/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Coprinus comatus</i>	C	1998	N.L. Bougher (unpubl. foray data)	
<i>Coprinus disseminatus</i>	A	8/08/1971	A.M. Young	758825
<i>Coprinus micaceus</i>	A	28/01/2000	R.T. Wills	7658451
<i>Coprinus</i> sp.	B	31/07/1971	A.M. Young	758272
<i>Coprinus</i> sp. <i>delicate</i> in litter	D	13/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Coprinus</i> sp. <i>delicate</i> in litter	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Cortinarius archeri</i>	A	11/07/1999	N.L. Bougher <i>et al.</i>	7658524
<i>Cortinarius microarcheri</i>	C	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Cortinarius ochraceus</i>	A	30/06/1968	A. Walker	754595
<i>Cortinarius radicans</i>	C	1998	J. Hallberg (Hallberg 1998)	
<i>Cortinarius rotundisporus</i>	A	8/07/1986	C. Wilson	922579
<i>Cortinarius</i> sp.	B	29/07/1974	R.N. Hilton	768790
<i>Cortinarius</i> sp.	B	24/06/1981	Anonymous	7590091
<i>Cortinarius</i> sp.	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Cortinarius</i> sp. <i>species A</i>	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Cortinarius</i> sp. <i>species B</i>	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Cortinarius subarcheri</i>	C	1998	J. Hallberg (Hallberg 1998)	
<i>Crepidotus applanatus</i>	A	12/06/1985	S. Bellgard	920398
<i>Crepidotus eucalyptorum</i>	C	9/07/2004	N.L. Bougher <i>et al.</i> (Bougher <i>et al.</i> 2005)	
<i>Crepidotus mollis</i>	C	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Crepidotus</i> sp.	B	25/06/1982	M. Firth	909866
<i>Crepidotus</i> sp.	B	13/06/1999	K. Clarke	7612699
<i>Crepidotus</i> sp.	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Crepidotus</i> sp.	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Crepidotus uber</i>	A	14/07/1966	H.C. Broughton	755125
<i>Cribraria microcarpa</i>	A	26/07/2004	C. Jordan	6872697
<i>Cribraria minutissima</i>	A	12/07/2004	C. Jordan	6873103
<i>Cribraria</i> sp.	B	1/09/2004	C. Jordan	6873049

Table 2 (cont.)

Fungi Name	Code	Date first collected or recorded	Collector/Recorder (Reference for non-vouchered records)	PERTH No.
<i>Datronia stereoides</i>	A	11/07/1999	N.L. Bougher	7658923
<i>Diplodina melanocraspeda</i>	A	6/09/1993	J.A. Bathgate	3269906, 3269884, 3269892 6873022
<i>Echinostelium minutum</i>	A	?/07/2004	C. Jordan	
<i>Entoloma</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Entoloma</i> sp.	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Exidia glandulosa</i>	A	15/07/1971	M.E. Trudgen	968374
<i>Fistulina hepatica</i>	C	20/06/1970	P.H. Ross (Ross unpubl. notes)	
<i>Fomes</i> sp.	B	3/07/1962	A.M. Tan	929891
<i>Fomitopsis lilacinogilva</i>	A	13/06/1999	N.L. Bougher	7612664
<i>Galerina autumnalis</i> group	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Galerina nana</i> group	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Galerina</i> sp.	B	8/08/1971	A.M. Young	760897
<i>Galerina</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Galerina</i> sp.	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Galerina unicolor</i>	C	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Geastrum triplex</i>	A	25/06/1985	N. Pendlebury	963127
Genus sp. (myxomycetes)	B	21/07/2004	C. Jordan	6873111
Genus sp. (myxomycetes)	B	28/07/2004	C. Jordan	6873073
<i>Gymnopilus allantopus</i>	A	21/07/1966	H.C. Broughton	814571
<i>Gymnopilus purpuratus</i>	A	16/06/1997	N.L. Bougher	7608276
<i>Gymnopilus</i> sp.	B	13/06/1999	B. Rees	7612672
<i>Gymnopilus</i> sp.	D	31/07/1963	P.H. Ross (Ross unpubl. notes)	
<i>Gyroporus cyanescens</i>	A	25/05/1998	N.L. Bougher	7572646
<i>Gyroporus</i> sp.	B	4/05/1982	N. Malajczuk	7607385
<i>Gyroporus</i> sp.	D	1/06/1965	P.H. Ross (Ross unpubl. notes)	

<i>Hebeloma westraliense</i>	C	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	7676840
<i>Heterotextus peziziformis</i>	C	1998	J. Hallberg (Hallberg 1998)	919403
<i>Hohenbuehelia</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Hydnangium carneum</i>	C	1998	N.L. Bougher (unpubl. foray data)	
<i>Hydnangium</i> sp. (immature)	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Hydnoid</i>	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Hypoholoma fasciculare</i> -like	D	20/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Hypocrea</i> sp.	D	3/07/1985	D. W'aldie (unpublished?)	
<i>Inocybe banksiana</i> (nom. prov.)	A	3/09/2001	P.B. Matheny	
<i>Inocybe geophylla</i>	A	3/07/1985	A. Webb	
<i>Inocybe</i> sp. brown	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Inocybe</i> sp. small fibrillose	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Inocybe violaceocaulis</i>	A	26/06/1985	E. Horak (as sp.)	7712812, 7676816 (Coll. in 2001)
<i>Inonotus</i> sp. brown, tomentose top, shallow dirty cream tubes	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Jelly fungus</i>	D	9/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Laccaria lateritia</i>	C	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Laccaria</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Laccaria</i> sp.	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Laccaria</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Laccaria</i> sp. cf. <i>lateritia</i>	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Laetiporus portentosus</i> (as <i>Polyporus eucalyptorum</i>)	A	1957	Not stated (Main & Serventy 1957)	941565 (Coll. in 1976)
<i>Lamprospora</i> sp.	B	1962	A.M. Tan	747157
<i>Lentinellus cochleatus</i>	A	14/07/1966	H.C. Broughton	934666
<i>Lepiota australiana</i>	C	1839	L. Preiss (Hilton 1988)	
<i>Lepista nuda</i>	A	1/07/1981	P. Yeoh	908819
<i>Lepista sordida</i>	A	29/08/1981	O.K. Miller	909416
<i>Limacella illinata</i>	C	1998	J. Hallberg (Hallberg 1998)	
<i>Limacella</i> sp.	D	12-Jun-64	P.H. Ross (Ross unpubl. notes)	
<i>Limacella</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	

Table 2 (cont.)

Fungi Name	Code	Date first collected or recorded	Collector/Recorder (Reference for non-vouchered records)	PERTH No.
<i>Lizonia oxylobii</i>	A	19/11/1915	A. Cayzer	785601
<i>Lycogala epidendrum</i>	A	8/01/1976	P. Wycherley	6236383
<i>Lycopodon</i> sp.	D	4/04/1964	P.H. Ross (Ross unpubl. notes)	
<i>Lycopodon</i> sp.	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Marasmius</i> spp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Melanoleuca</i> sp.	B	5/07/1982	R.N. Hilton	911461
<i>Melanoleuca</i> sp.	B	3/09/2001	P.B. Matheny	7677146
<i>Morchella</i> sp.	B	24/09/1964	J. Malcolm & D. Biggins	743518
<i>Morchella</i> sp.	D	?	Anonymous (unpublished?)	
<i>Mycena nargan</i>	A	9/07/2004	N.L. Bougher <i>et al.</i> (Bougher <i>et al.</i> 2005)	7678916
<i>Mycena</i> sp.	D	9/07/2004	N.L. Bougher <i>et al.</i> (Bougher <i>et al.</i> 2005)	
<i>Mycena</i> sp.	B	26/06/1978	J.R. Hanley	901938
<i>Mycena</i> sp.	B	11/07/1984	D. Weatherilt	918288
<i>Mycena</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Mycena</i> sp.	D	9/07/2004	N.L. Bougher <i>et al.</i> (Bougher <i>et al.</i> 2005)	
<i>Mycena</i> sp. (<i>pura?</i>)	D	1998	J. Hallberg (Hallberg 1998)	
<i>Mycena</i> sp. chlorine, dark cap, large, rooting stem, in litter	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Mycena</i> sp. chlorine, in litter	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Mycena</i> sp. small pale grey cap, on wood	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Mycena</i> sp. species A	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Mycena subgalericulata</i>	A	22/07/1997	N.L. Bougher	7608756
<i>Nolanea</i> sp.	D	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Omphalotus</i> (as <i>Pleurotus</i>) <i>nidiformis</i>	A	10/05/1968	E. Tenraa	835269
<i>Osmoporus</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Panaeolus</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	

<i>Paradiacheopsis fimbriata</i>	A	9/07/2004	C. Jordan	6872964
<i>Perenniporia oviforma</i>	A	22/07/1997	N.L. Bougher & R.T. Wills	7608764
<i>Peziza</i> sp.	B	25/07/1962	A. Puddy	743003
<i>Peziza vesiculosa</i>	C	12/07/1965	P.H. Ross (Ross unpubl. notes)	
<i>Phallus costatus</i>	A	26/09/1971	A.M. Young	957305
<i>Phallus</i> sp.	D	23/07/1965	P.H. Ross (Ross unpubl. notes)	
<i>Pholiota</i> cf. <i>hilandensis</i>	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	758817
<i>Pholiota highlandensis</i>	A	8/08/1971	A.M. Young	
<i>Pholiota multicingulata?</i>	C	31/07/1963	P.H. Ross (Ross unpubl. notes)	
<i>Pholiota</i> sp.	B	14/05/1968	R. Mead	815152
<i>Phylloporus clelandii</i>	A	22/05/1974	T. Barley (Watling & Gregory 1991)	770973, 7586671 (Coll. in 1997)
<i>Phylloporus hyperion</i>	A	15/05/1968	R. Mead	813095
<i>Phylloporus</i> sp.	B	20/06/1981	Anonymous	7590024
<i>Phylloporus</i> sp.	B	24/06/1981	Anonymous	7590075
<i>Phylloporus</i> sp.	B	13/06/1999	N.L. Bougher <i>et al.</i>	7612680
<i>Physarum gyrosum</i>	A	25/06/2004	M. Brundrett	7214499
<i>Piptoporus australiensis</i>	C	13/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Pisolithus marmoratus</i>	C	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	7629419
<i>Pisolithus microcarpus</i>	A	16/05/1982	N. Malajczuk	952044
<i>Pisolithus</i> sp.	B	?/11/1940	J. Gentilli	
<i>Pisolithus</i> sp.	D	9/07/2004	N.L. Bougher <i>et al.</i> (Bougher <i>et al.</i> 2005)	
<i>Pisolithus tinctorius</i>	A	?/05/1962	B. Phillips	954098
<i>Pluteus</i> sp.	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Polypore bracket</i>	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Polypore</i> sp. <i>cinnamom pores</i>	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Polypore</i> sp. <i>dentate pores</i>	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Polypore</i> sp. <i>large white pores</i>	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Polyporus citreus</i>	C	1998	J. Hallberg (Hallberg 1998)	2358824
<i>Polyporus infernalis</i>	A	?/10/1988	R.N. Hilton	937339
<i>Polyporus oviformis</i>	A	?	N.E.M. Walters	773093
<i>Psathyrella</i> sp.	B	26/05/1975	D. Waldie	

Table 2 (cont.)

Fungi Name	Code	Date first collected or recorded	Collector/Recorder (Reference for non-vouchered records)	PERTH No.
<i>Psathyrella</i> sp.	B	30/05/1997	M.E. & N.L. Bougher	7597339
<i>Psathyrella</i> sp.	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Psathyrella</i> spp.	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Pseudoplectania</i> sp.	D	1998	J. Hallberg (Hallberg 1998)	
<i>Puccinia recondita</i>	A	18/10/1923	W.M. Carne	823031
<i>Puffball</i>	D	9/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Pulvinula miltina</i>	A	5/06/1970	D. Waldie	1125834
<i>Pulvinula</i> sp.	B	5/06/1970	D. Waldie	743992, 7612486 (Coll. in 1998)
<i>Pulvinula</i> sp.	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Pycnoporus coccineus</i> (as <i>Trametes cinnabarinum</i>)	A	1957	Not stated (Main & Serventy 1957)	7572638 (Coll. in 1998)
<i>Quambalaria coyrecup</i> (likely to be <i>Sporotrichum destructor</i>)	C	1935	H. Pittman (Cass Smith 1970)	
<i>Ramaria ochraceosalmonicolor</i>	C	20/07/1966	P.H. Ross (Ross unpubl. notes)	
<i>Ramaria</i> sp.	B	?/07/1980	B. Walker	944726
<i>Ramaria</i> sp. pinkish brown, vertical branches	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Ramaria</i> sp. red brown	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Ramaria</i> sp. smaller, pale, fine branches, cristata-like	D	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Ramaria</i> sp. yellow	D	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	5485479,
<i>Reddellomyces westraliensis</i>	A	13/06/1981	N. Malajczuk	7614209 (Coll. in 1981)
<i>Resupinate corticioid</i>	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	

<i>Rhizopogon roseolus</i>	A	30/05/1997	N.L. & M.E. Bougher	7571321
<i>Russula delicata</i> group	D	23/05/1974	R. Watling (Watling 1976)	735051, 919454
<i>Russula erumpens</i>	A	17/05/1968	N. Sammy	(Coll. in 1985)
				767824
<i>Russula</i> sp.	B	23/05/1974	R.N. Hilton	7607393
<i>Russula</i> sp.	B	4/05/1982	N. Malajczuk	
<i>Russula</i> sp. <i>pileus pure white</i>	D	23/05/1974	R. Watling (Watling 1976)	7648316
<i>Schizophyllum commune</i>	C	1957	Not stated (Main & Serventy 1957)	
<i>Scleroderma areolatum</i>	A	3/09/2001	P.B. Matheny	7613660
<i>Scleroderma cepa</i>	C	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	748722
<i>Scleroderma</i> sp.	B	16/06/1989	O.K. Miller Jr. & H. Miller	6873030
<i>Sepedonium</i>	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Sepedonium</i> sp.	B	23/05/1974	Anonymous	
<i>Stemonitopsis amoena</i>	A	14/07/2004	C. Jordan	7597320
<i>Stereum hirsutum</i>	C	11/07/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Suillus granulatus</i>	A	30/05/1997	M.E. & N.L. Bougher	964115
<i>Suillus</i> sp. (as <i>Boletus</i>)	D	17/08/1963	P.H. Ross (Ross unpubl. notes)	5013445
<i>Thaxterogaster</i> sp.	B	24/07/1986	N.L. Bougher & R.N. Hilton	
<i>Tilletia viennotii</i>	A	4/02/1996	C. & K. Vanky	
<i>Trametes lilacino-gilvus</i>	C	1998	N.L. Bougher (unpubl. foray data)	
<i>Trametes versicolor</i>	C	13/06/1999	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Tremella aurantialmesenterica</i>	C	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Tricholoma</i> sp.	D	2/06/1965	P.H. Ross (Ross unpubl. notes)	
<i>Tricholomopsis rutilans</i>	C	1998	J. Hallberg (Hallberg 1998)	
<i>Tubaria rufofulva</i>	C	1998	J. Hallberg (Hallberg 1998)	7597398
<i>Tubaria serrulata</i>	A	2/06/1997	N.L. & M.E. Bougher	904643,
<i>Tylopilus pseudoscaber</i>	A	6/07/1980	G. Rhind	919373
				(Coll. in 1985)
				750425
<i>Volvariella</i> sp.	B	3/08/1964	J. Goodwin	
<i>Volvariella speciosa</i>	C	12/06/1964	P.H. Ross (Ross unpubl. notes)	
<i>Xeromphalina</i> sp.	D	6/07/2000	N.L. Bougher <i>et al.</i> (unpubl. foray data)	
<i>Xerula australis</i>	C	6/06/1997	N.L. Bougher <i>et al.</i> (unpubl. foray data)	

and including treating each vouchered collection designated as "sp." as a unique taxon). However, until all of the fungi specimens from Kings Park that are vouchered in herbaria are examined in further detail using modern comparative morphological and molecular methods to verify their identity, it will remain uncertain how many species of fungi accurately have been recorded at Kings Park.

Although many of the records of fungi at Kings Park require verification or cannot be verified, overall they indicate that Kings Park may have a fungi species richness equal to, or greater than, that of other similar bushland areas. At nearby Bold Park (less than 10km distant), over 400 species of macrofungi have been recorded during surveys contracted by the Botanic Gardens and Parks Authority (Bougher 2009b). A significant proportion of new records have been found at selected survey sites in Bold Park each year over a 10 year period (1999 to 2009), including an estimated 40% new in 2009 (Bougher 2009b). A similar survey effort over many years at Kings Park will be required to determine how many fungi species occur there. To instigate and encourage such an effort, the Botanic Gardens and Parks Authority has recently contracted the first of intended annual surveys of fungi which will document the fungi of Kings Park and Botanic Garden. It will be of particular interest to com-

pare successive years of fungi survey data from Kings Park with data from Bold Park and other bushlands in the region. Data from the surveys will be likely to reveal patterns of fungal distribution and associations with native flora and fauna. Such data may help to guide the long-term management of Kings Park, Bold Park and other similar areas.

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REFERENCES

- BARRETT, R. and TAY, E.P. 2005. *Perth Plants: a field guide to the bushland and coastal flora of Kings Park and Bold Park, Perth, Western Australia*. Botanic Gardens and Parks Authority, Perth, Western Australia.
- BAS, C. 1969. Morphology and subdivision of *Amanita* and a monograph of its section *Lepidella*. *Persoonia* 5: 285–579.
- BATES, D.M. undated. *Native vocabularies*. Swan Magisterial District. Typescript copy of MS, Section 12, 2B. (13pp.). Section 12, 2B. [ANL-MS365-42/2-49, BAT 1212A]. (not seen, information from Arpad Kalotas).

- BENNETT, E.M. 1988. The bushland plants of Kings Park Western Australia. Cullity Timbers, Perth.
- BENNETT, E.M. 1992. Plants collected by J.A.L. Preiss from Kings Park in 1839. *The Western Australian Naturalist* **19**: 17–21.
- BERKELEY, M.J. 1845. Decades of fungi Dec. III.–VII. *Australian Fungi. London Journal of Botany* **4**: 42–73.
- BOTANIC GARDENS AND PARKS AUTHORITY 2006. *Bold Park Management Plan 2006–2011*. Botanic Gardens and Parks Authority, Perth, Western Australia.
- BOTANIC GARDENS AND PARKS AUTHORITY 2009. *Kings Park and Botanic Garden Draft Management Plan 2009–2014*. Botanic Gardens and Parks Authority, Perth, Western Australia.
- BOUGHER, N.L. 2009a. *Fungi of the Perth Region and Beyond*. Western Australian Naturalists Club (Inc.), Perth, Western Australia. (Also at www.fungiperth.org.au).
- BOUGHER, N.L. 2009b. *Fungi survey – Bold Park 2009*. Consultancy Report for the Botanic Gardens and Parks Authority (BGPA). Client Report Department of Environment and Conservation, and Perth Urban Bushland Fungi Project.
- BOUGHER, N.L., HART, R., and WEAVER, J. 2005. *Kings Park Fungi Report 2004*. Perth Urban Bushland Fungi Project Report for the Kings Park Guides. Also online at www.fungiperth.org.au.
- BOUGHER, N.L. and WILLS, R. 1998. Fungi of Kings Park and Botanic Garden. *For People and Plants* (Newsletter of the Friends of Kings Park) **22**: 4–5.
- CASS SMITH, W.P. 1970. Stem canker disease of red flowering gums. *Journal of the Department of Agriculture, Western Australia* **11**: 33–39.
- ERICKSON, D. 2009. *Joy Forever – The story of Kings Park and Botanic Garden*. Botanic Gardens and Parks Authority, Western Australia.
- FISH, S. 1970. The history of plant pathology in Australia. *Annual Review of Phytopathology* **8**: 13–36.
- GENTILLI, J. 1951. Western Australian Fungi. *Westralian Farmers Co-operative Gazette* **April 1951**: 230–234.
- GENTILLI, J. 1953. Amanitas from King's Park, Perth. *The Western Australian Naturalist* **4**: 25–34 & 59–63.
- GEORGE, A.S. 2009. Botany. pp. 138–140, In: Gregory, J. & Gothard, J. (Eds.). *Historical Encyclopedia of Western Australia*. p138–140. University of Western Australia Press, Crawley, Western Australia.
- GRIEVE, B.J. 1975. Botany in Western Australia: A survey of progress: 1900–1971. *Journal of the Royal Society of Western Australia* **58**: 33–53.
- HALLBERG, J. 1998. *Interaction of fire and the occurrence of macrofungi in Kings Park*. Curtin University Biology Project 302 Report.
- HILTON, R.N. 1982. A census of the larger fungi of Western Australia. *Journal of the Royal Society of Western Australia* **65**: 1–15.

- HILTON, R.N. 1983. The Drummond collection of Western Australian fungi at the Royal Botanic Gardens, Kew. *Nuytsia* **4**: 333–357.
- HILTON, R.N. 1988. The Preiss collection of Western Australian fungi. *Nuytsia* **6**: 295–304.
- JORDAN, C.C., BIMS, M.H., SPEIJERS, E.J. and DAVISON, E.M. (2006). Myxomycetes on the bark of *Banksia attenuata* and *B. menziesii* (Proteaceae). *Australian Journal of Botany* **54**: 357–365.
- KALCHBRENNER, C. 1883. New species of *Agaricus* discovered in Western Australia. *Proceedings of the Linnæan Society of New South Wales* **7**: 638–639.
- KALOTAS, A.C. 1996. Aboriginal knowledge and use of fungi. *Fungi of Australia* **1B**: 269–295.
- KILE, G. A. WATLING R., MALAJCZUK N. and SHEARER B. L. 1983. Occurrence of *Armillaria luteobubalina* Watling and Kile in Western Australia. *Australian Plant Pathology* **12**: 18–20.
- MAIN, A.R. and SERVENTY, D.L. (Eds.) 1957. King's Park as an indigenous park. A natural history appraisal. *The Western Australian Naturalist* **6**: 25–33.
- MAY, T.W. and PASCOE, I.G. 1996. History of the taxonomic study of Australian fungi. *Fungi of Australia* **1B**: 171–206.
- MILLER, O.K. Jr. 1991. New species of *Amanita* from Western Australia. *Canadian Journal of Botany* **69**: 2692–2703.
- MILLER, O.K. Jr. 1992. Three new species of *Amanita* from Western Australia. *Mycologia* **84**: 679–686.
- MILLER, O.K. Jr. 1994. Observations on the genus *Omphalotus* in Australia. *Mycologia Helvetica* **2**: 91–100.
- PAAP, T., BURGESS, T.I., McCOMB, J.A., SHEARER, B.L. and HARDY, St. J. G.E. 2008. *Quambalaria* species, including *Q. coyrecup* sp. nov., implicated in canker and shoot blight diseases causing decline of *Corymbia* species in the southwest of Western Australia. *Mycological Research* **112**: 57–69.
- ROSS, P.H. undated. *Mycology Notes 1966–1970–1973*. Unpublished notes.
- SHIVAS, R.G. 1989. Fungal and bacterial diseases of plants in Western Australia. *Journal of the Royal Society of Western Australia* **72**: 1–62.
- WATLING, R. 1976. Report and commentary to the British Council, and List of Australian fungi. Unpublished Report.
- WATLING, R. 1982. Report and commentary to the British Council and Australian Hosts, and Material collected by Roy Watling during his tour of duty in Australia April – June 1982. Unpublished Report.
- WATLING, R. and GREGORY, N.M. 1991. Observations on the boletes of the Cooloola Sandmass, Queensland and notes on their distribution in Australia. Part 3. Lamellate taxa. *Edinburgh Journal of Botany* **48**: 353–391.